Drivers of Earnings Management: The Profit and Loss before Earning Management

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Accepted: July 28, 2014
DOI: 10.5296/ijafr.v4i2.5674 URL: http://dx.doi.org/10.5296/ijafr.v4i2.5674

Abstract

This study aims to evaluate the effect of two major drivers including: bad company and also the lower benefit from the profits over the previous year on earnings management process of active companies in the capital markets in Iran. Research time period is 6-year (from 2006 till 2011) and the population is all the listed companies in Tehran Stock Exchange. The sample was obtained by screening method includes 199 company. The results of hypotheses testing using panel data showed the probability of using of discretionary accruals in order to show profitable enterprise increases, when the company has loss before using earning management in Iranian market capital. The results also indicate that when the current company's profit is lower than the previous year's profit, the possibility of using the discretionary accruals increases to show positive changes in profitability. Thus, it can be announced that bad and also lower benefit from last year, are as two major driving of earnings management.

Keywords: earning management, profit before applying earnings management, discretionary accruals.
Introduction

Accounting earnings consist of cash and accrual item and accruals are largely in control by management. Often, investors and executives believe companies that have good profitability trends and their benefits have no major changes, have more value and more predictability in compare with similar company. Also, according to agency theory, managers can also have the incentive to manipulate earnings to maximize their interests. This study attempted to examine the influence of both major drivers of earning management including: being bad company and also have lower benefit from previous year, in active Iranian market.

Problem Statement

Studies have shown that low volatility and stabilize profit, are indicative of its quality. Therefore, investors with more sure invest in the stock of the companies that their profit process is more stable. Earnings management is defined as public involvement management in process of determining profits that is in line with the desired objectives of management (Wild et al, 2001, p238).Corporate earnings management behavior has been studied and it has been linked with a measure of profitability includes profit and increase profits (Bourg AstalrandDichew,1997, p 106). They have concluded that lack of continue in profits to near zero and near-zero changes in earnings leads to managers manipulate they Earnings to report its Earnings or maintain previous year profits.

Despite several studies that have been done in relation to earnings management, still whether or not to achieve the criteria by earnings manipulating are at least two reasons that remain unsolved. First, the claim that the presence of causal link between earnings management and profit criteria is based on reported earnings. Second, although the earnings discontinuity is visible, but regardless of the managerial manipulation, the level of normal profit is not defined (Kristian and Ray, 2007, p 402). In reality, the management recognizes in order to achieve the goal of real benefit is contingent on the nature real earnings which is remembered as earnings before applying earnings management. Infact, profit before applying earnings management is a function of executive recognition in order to adjusteearnings or decrease the loss for the state to increase profitability or benefit reporting. So the main question in this study is as following:

Being a bad company or reduce its profitability increase the possibility of using the discretionary accruals for showing a large company is profitable?

Research hypotheses

H1: the possibility of using the discretionary accruals in order to show profitable firm increase, when the firm is a bad company before applying earnings management.
H2: the possibility of using the discretionary accruals in order to show positive changes in profitability increase, when current earning is lower than the previous year’s earnings the firm.

Research methodology

Research methodology can be set of rules and tools and systematic reliable way to evaluate the facts, discover the unknown and achieve absolution to the problem. In humanities
several division of the researches been done. Based on objective, research can be fundamental, applied or scientific. The purpose of applied research is practical application of knowledge in a particular field (Khaki, 2002, p 74). Based on the method of data collection, research can be historical, descriptive, correlation, experimental or casual. Descriptive research consist of a set of methods that aim to describe conditions or phenomena. Correlational studies, including studies in which the relationship between different variables, can be explored and explained using the correlation coefficient. The main purpose of correlational studies is to determine the type, size and value of the relationship between two or more variables (Sarmad et al, 2011, p 92). The present research is descriptive-correlational methodologically and will attempt to use the correlation coefficient and regression in order to explore and explain relationships between variables. In terms of the survey data, this study is a post, because the previous year data are studied. Also, in terms of the purpose, this research is in the field of applied research.

The population and statistical sample:

The statistical population of this study is listed companies in Tehran Stock Exchange. The sample consists of limited number of sections of the population that express the main features of the population (Azar&momeni, 2010, p 5). The study will be used elimination method to select a sample. For this purpose, four criteria are considered. If a company has met all the criteria, it will be selected as one of the companies in my sample. The criteria are as follows:

1. Firms listed in Tehran Stock Exchange before 2006 and is active in the exchange by the end of 2011.
2. Firms did not change the fiscal year and end in March.
3. The firm does not participate in group investment firms or financial intermediation.
4. The required information is available on the firm.

After considering all of the above criteria, 199 companies remain as the screened population that all of them were selected as sample. Thus, our observations reached to 1194 firm-year that these observations are part of 28 different industries.

Methods of data analysis and hypothesis testing

In this research, multivariate linear regression model is used to data analysis and hypothesis testing. Statistical method that is used in this study is a panel data approach. First, the accuracy of data integration is tested using theft-bound, then the type of testing method determined based on the results of the Hausman test (fixed effects or random effects) and the model is estimated according to the type of approach. F statistic is used to evaluate the significance and to evaluate the significance of the coefficient of the independent variables in the model. T-statistics were used and confidence level of 95% is used to make decisions to accept or reject hypotheses. Also, to verify the normality of variables, being equal variance and independent errors we used Jarque-Bera test and statistic Durbin-Watson respectively. In this study, we used SPSS and Eviews software to data analysis.
Research key words:

Earnings management: earnings management is a method used by management to manipulate data. In this study, consistent with the approach of Sun and Roth (2012, pp 30) adjusted discretionary accruals is applied as a measure of earnings management.

Earnings before applying earnings management: management recognition to achieve profitability target, contingent on nature of real benefits to those dealing with it is referred to as earnings before applying earnings management. For example, management may improve the profit before applying earnings management when it is less than optimal point. Also, management may decrease the profit before applying earnings management when it is more than optimal point and some of them may reserve to cover profit next year (Income smoothing). Moreover, when the profit before earnings management is extremely lower than target profit and management efforts to achieve it has not resulted practically, usually accruals are used to reduce profit (Sun and Roth, 2012, p 31).

Discretionary accruals: accounting earnings is separable into two components: cash and accrual. Accrual component involves reflecting profit estimates and judgments of management (Dechew and Dechew, 2002, p41). Where accruals are also separable into two components: optional and non-optional. Discretionary accruals are items which management has control over them and can delay or eliminate them or accelerate the identification and record used as criteria of detecting earnings management.

Financial reporting: purposes and quality

According to toast’s research (1997, p 13) timeliness of financial statements is the identification of economic losses, because the changes in the quantity of the balance sheet occur if the following of income statement. Identifying the profit and loss timely leads to timely appeal all financial variables and financial ratios. Profit represents the ultimate performance of the companies and a high level of it represents that the performance is good (Israeli, 2006, p 38).

Income and the concepts related to concepts

Income or revenue is the increase in equity, except what is related to bring by the capital owners (Iranian accounting standards, 2008). Reported profit help the economy in various ways, such as providing a basis for tax calculation, criteria for evaluating the successor performance, criteria for determining the amount of divisible profits, a measure to manage an economic unit and other items. Accounting income is the difference between the capital of the business unit at the end and first of financial period and the capital considered to be synonymous with tenet assets. Therefore, the measurement of Income is affected by the basics of measuring assets and liabilities and in determining accounting earnings although expressing the accounting activity, but has constantly been criticized (Kordestani & Keshavarzi, 2010, pp.118).

Income types: operational income versus non-operational income

The concept of profit includes both of operating income and non-operational incomes. Operating income is defined as income is achieved from continuing operation of the business.
and will be discussed by different headlines such as sales, fees, guaranteed interest, dividends, and patents (Iranian accounting standards, 2008). The concept of operating profit of business unit focuses on measuring the efficiency. In calculating the operating profit emphasize is on the term "operational". This means that changes only are due to the main operation and so, it is possible to compare it with other operations. Despite the emphasis of financial analysts on the number of only net income, -disclosure

of operatingitemsand non-operatingis important. So if there reference is to a profit figure, according to proponents of the concept of operating income, net income from current operations is better criteria for evaluating current performance (Safarpur and Safarpur, 2008, p 13). In addition to operating income, there's also income that be created by the effects of the side activities and operations of the company and is reported after operational income in income statement. Degree of repeatability and stability, as well as the content information of them that are part of the Non-operational component of income, is the subject that created disagreement between scholars and is a question between accounting information users. Non-operational nature of these items have caused a lot of questions and uncertainty about the other features of these items, such as stability, their relevance of future earnings, as well as their relevance to the market value of the company (Izadinia & Dorri, 2010, pp. 32-17).

**Earnings Manipulation**

Britton and Astolovy (2000, p 76) defined manipulation of accounts as: Using management insight to select accounting procedures or transactions designed so that effects on the transfer of wealth between the company and society (political costs), fund providers (cost of capital) or managers (compensation plans). The company will benefit from the wealth transfer in wealth transfer between the company and society as well as the company and providers of funds, but in the wealth transfer between the company and the directors, managers will act in their favor and the company's losses. Appropriately to apply the requirements of accounting standards with additional disclosure when necessary, it is desirable to result in financial statements and if managers manipulate their accounts using managerial insights within the generally accepted accounting principles, presentation of Financial Statements would not be fair. If this manipulation is done in violation of generally accepted accounting principles, be considered cheating (Zamani, 2009). In the framework of Astolovy & Britton (2000, p 81) to classify the types of accounts, they offered this fundamental principle that financial information has a major impact on reducing the cost of financing. This reduces independent on improvement in investors perception of the risk of the company (Mashayekhi et al, 2005, pp. 74-61). Earnings manipulation is changing Earning by directors consciously and with specific purposes. The aim is to manipulate the accounts, which may affect the perception of market from firm risk.

**The concept of earnings management**

Since the calculation of economic profits are affected by the method of accounting estimates and business unit management is responsible for preparing financial statements and may, for various reasons, management may attempt to manage earnings (Valizadeh, 2008, p 27).

The Molford and Kamisky (2002, p 27) Earnings management is a conscious and
activemanipulationof accountingresultsin order to show the change in the status of economic units. In Accounting Theory Scott (1997) Earnings management defined as a company's choice of accounting policies to achieve some specific goals by the administrator. According to Giroux (2004), earnings management consists of a range which starts from conservative accounting and continues with moderate or unbiased accounting and then with deviations from the accounting principles, rules and conventions, courageous accounting and eventually leads to fraudulent or deceitful accounting.

Administrators view can be conservative or cautious. In this case, circumventing accounting standards and presence of unexpected items less view and of course, full disclosure is made. With realizing this ideal result, showing the figures nearly to reality in the financial report sand provide high quality and favorable earnings. The reverse case is managers extreme view mode in the aggression of regulation, and violation of rules and norms accepted accounting principles that adjust deceitful and misleading financial reporting (Baharmoghadam, 2006, p 52).

**Models and theories related to earnings management**

There are different patterns of earnings management. The first model in this regard is proposed as relaxation model. This model is the most damaging type of earnings management. Destructive character of this model is that firm performance does not justify the price of the stock market. In such circumstances, artificially of the earnings provided by the company appears. That this is not only reduces shareholder value, but also hurts the company's reputation (Ahmadpoor and John M. Farr, 2002, p. 61). Another model is profit maximization that is applicable about the management bonus plan and management tries to increase profits in order to achieve a more rewarding. In contrast to this pattern, there is minimization model. This pattern holds true in the case of companies that have a conservative approach to long-term profitability. But the most common pattern of earnings management is income smoothing model. This model tries to reduce reported earnings due to temporary fluctuations that is inconsistent with economic profit (Ahmadpoor and Karimi, 2006, p 25). Various theories have been presented regarding earnings management. One of the theories that have emerged as the earnings management explanation is demonstrability theory. The theory was expanded by Watz & Zymberman (1986). According to this, with presence of the inefficient market hypothesis, two companies that have same cash flow have the same value, even thought they have different accounting practices. According to the original content, the main problem in demonstrability theory is determining the manner in which accounting practices will be effective on the company's cash flow and consequently the benefits of management and lead to changes in the market price of the shares firm value. Another theory is the agency theory which Makling by Jensen (1976) has expressed their basics. This theory emphasizes freedom of contracts and comes into action between different organizational groups as an efficient solution to eliminate the conflict of interest. The evolution of theory has led to the view that the organization is ring of contracts that through judgment of delegating with certain tasks are performed by higher authorities. Manager as the benefit of its shareholders looks for maximization of his benefits. Buthis interest slie in the interests of shareholders as specified in the contract. On this basis, the company's performance and financial information provided to
the company, resulting in a balance of benefits between the two groups and earnings management practices by management (income smoothing) not only provides benefits management, it also provides shareholders’ benefits (Ahadmooor and Karimi, 2006). Other theories are discussed in relation to earnings management is income smoothing theory that the first time is provided by Gordon (1964, p 251). According to this theory: 1) administration criteria for selection of accounting principles, is promoting its own interests. 2) With the increasing in job security, the management benefits, revenue growth and company growth rate increases. 3) Achieving the objectives stipulated in the second paragraph depends on the consent of shareholders. That is much more shareholders are pleasing, the job security of management, salary and benefits will be more. 4) Average growth rate of corporate profit and its stability increases shareholder satisfaction.

Views of supporters and opponents of earnings management

Research conducted by Mychelson and others (1995) show that firms that have more smooth earnings considerably have higher average annual returns than firms that don’t have income smoothing operations. According to proponents, large fluctuations in earnings make difficult overall planning and budgeting. In the other hand, opponents of income smoothing and earning management defined that smoothing is distortions in financial reporting purposes. Emhaf (1981, p 23) believed that when the variables are manipulated for profit flat, it appears that disclosure is not enough. Beidleman (1973, p 653) believes that income smoothing makes difficult to analyze financial statements.

Types of earnings management

Types of earnings management can be divided into five groups: 1- earnings management through scheduling events: The administrator can control the timing of events. Such as the allocation of costs to future periods, constitute capital of some expenditure. Management has the authority to how and when identify events. Timing of buying and selling property can also affect the accounting profits (Nazmi Ardekani, 2010, pp. 114-119). The first research on earnings management was conducted through asset sales by Barreto (1993). The results of these studies suggest that managers using the timing of the asset sale smooth the temporary changes of profit and manage the earning.

Earnings management through selecting and changing accounting policies

Accounting policy choice effects on the timing of revenues and expenses recognition in profit calculation. For example, management has authority in estimating service life, residual value, intangible assets age, fuel rate of receivable accounts (Nazmi Ardekani, 1389, pp. 119-114).

Earnings management through accruals

In fact, under this type of accounting system, managers have considerable control over the diagnosis of some cost items, including cost of advertising and R & D expenditures. On the other hand, administrators faced with several options at the time of revenue recognition in the accrual accounting system, including diagnosis faster revenue from credits sales (Mashayekhiet al, 2002, 74-61).
Earnings management through real activities manipulation (real earnings management)

Schipper (1989) noted in their study that earnings management could be included real activities. This type of earnings management carried out through changes in operational activities with the intention to mislead stakeholders. Manipulation of real activities effects on cash flows and accruals in some cases (Valizadeh & Larijani, 2008, p. 47). Roychodahry (2006, p. 335) argues that although these deviations in the company’s operations manager helps in achieving the objectives of financial reporting but it does not increase the firm value. The methods of real activities manipulate such as decreasing selling prices in order to increase in sales or reduced discretionary spending in the economic crisis, including optimization technique that help managers. So although administrators can achieve to short-term profits by performing such activities but in the long term they will not be able to increase the firm value.

Earnings management by changing the classification

When current statisticson Income other than profit be management issues and makeup profit, administrators can categorize items of components related to profit and thereby reduce the changes related to operating profit. For example, showing some non-operating revenues in the form of operating revenues or transfers some of operating expenses to general and administrative expenses, all of these will lead to an increase in operating profit of business units (MakVeigh, 2006, p. 501).

Incentives for earning management

Incentives such as job security, bonuses, escaping the law, to avoid reporting losses and reduced profit, contracts of liabilities, increased wealth, achieve shareholder expectations and anticipated programs, create an incentive to manipulate differently methods manipulating earnings in their own interest and conflict with the interest of other groups (Bahar Moghadam, 2006, p. 59). Other incentives for earnings management include tax incentives. Four main contractual positions may lead to earnings management: 1) debt covenant requirements, 2) compensation management contracts, 3) job security, and 4) negotiations with the unions. Considering the fact that a violation of the debt covenant requirements (including compliance of working capital ratio) imposes heavy costs on companies, it is expected that managers prevent from earnings management by applying it. Managers can also influence on the current and future rights and benefits through earning management. Managers may also attempt to income smoothing due to job security (Rahmani, 2009, p. 104-111). Earning management Incentives may be the result of implicit contracts (unconditional) as well. These contracts occur of continuous communication with stakeholders (shareholders, employees, material suppliers, customers, etc). Administrators can manage Stakeholder confidence by earning management and high-profit reported in fulfilling its contractual obligations (Bowen et al., 1995, p. 255). Political incentives are as other incentive for earning management. (Pourheydari & Hemmati, 2002, p. 47-63). Market incentives are as other incentives for earnings management. Market incentives in earning management arise when corporate executives understand the relationship between reported earnings and the company’s market value. (Rahmani, 2009, pp. 111-104).
Earnings management tools and methods:

Hendrikson& vanBerda(2006) uses accountingsolutionon theexpressionofearningmanagement toolsandthenoutlined thesepolicies as followings:

Inventoryvaluation(FIFOvs.LIFO),depreciation anddepletionof natural resources, the allocation of income tax, pensions, research &development research,goodwill, the time of income realization,comprehensive incomems.operational profit concept from income statement ,joint ventures, long-termleases, theprinciples related to incorporating and combinecommercial entities, measuring of gains ininvestmentcorporations,intangible assets in theoil and gas industry, changes inclassification.

According toBurtonandAstoloy(2000, p 39) earnings managementtoolsshouldhavethe following features:

• Earnings management tools should be used once so that a company does not have a specific action in response to do next.
• Earnings management tools should be based on professional judgment in the context of generally accepted accounting principles and should not be forced to disclose the fact of manipulation and lead to paragraph in audit report.
• Earnings management tools should lead to a basic transfer of income from one year to another.
• Earnings management tools should not require actual transactions, but should be required to classify the internal accounts.
• Earnings management tools need to be act alone or with other acts and should be used during each successive period (Yaghoubi , 2007 , p 57 ).

Accruals:

Accruals are differences between net incomeand cash flowsfrom operations. Dechewand Skinner(2002) state that earning managementis concerned withmanagement incentive and thisis linked tostockperformance, Therefore, if theincome smoothingresearchemphasis oncorporate value, the researchwould be beneficial.Obviously,income smoothing does notnecessarily lead to increase thecompany's value, butincome smoother should alsothink about theearnings qualityat the same time.

MacNicholsandWilson(1988, p 1179)divided earnings quality into threecategories:IncomeStability, accrualslevels andbenefitthat reflecttheeconomictransactions. Make relationship between qualitiesIncome and beneficial in making decisions and the economicdefinition of income. Income smoothingreduces thevarianceof reported earnings, butdoes not guaranteehigh quality ofIncome (the article that examines the relationshipbetween income smoothing, earnings quality and firm value).
Research background

Richardson et al (2002) in their study examined accounting information advantage in predicting the behavior of earnings management in companies offering direct further income statement. The results showed that accruals are key indicators of earnings manipulation that are leading to renewed reporting. Also, companies that provide renewed income statements are more likely to use earnings management. The results showed that companies that manipulate the financial statement store high profits, after the restatement of financial statements encountered with a larger reduction in the price of the stock.

Dechew and Skinner (2002) examined the behavior of earnings management in companies that have strong incentives to break the income chain model, but the results of the research do not indicate to what extent and at what time managers tend to break the chains of corporate profits.

Morhady (2010) examined the earnings management relationship and its relation with the laws and standards in Indonesia. The results show that earnings management in companies under study are not affected by accounting and auditing rules.

Recently San & Rat (2012, pp. 56-29) examined earning management and earning before applying earning management in Australian companies. This study has been evaluated criteria which managers attempt to increase profits to achieve the optimum income point. They showed that two measures including positive earnings and earnings changes are positively related to earnings manipulation. Those using data of Australian companies during the years between 2000 and 2006 concluded when the primary earnings is negative or is lower than the previous year's earnings, the possibility of using discretionary accruals to increase corporate earnings to achieve optimal point may be higher.

In Iran also Pourheydari and Hemmati (2004, pp. 63-47), in a study entitled "the effect of debt contracts, political costs, bonus plans, and ownership on earnings management" investigate the effective factors on earnings management. Statistical population of the study was listed companies in Tehran Stock Exchange during the years 1987 to 2001. The results show that there is no significant positive relationship between the ratio of debt to equity and earnings manipulation. The examination of the relationship between the size (total sales) and earnings manipulation showed that with increases in firm size, management has greater incentive to increase profits and to provide better picture of its performance to shareholders. Another variable used to examine the effect of political pressures related to earnings management was number of employees. The results indicated that companies that have a large number of employees are also more political pressure. As a result, the management of these units reduce their earnings to alleviate the pressure. Hypothesis test results (bonuses and ownership as variables) indicated no significant relationship between these variables earnings manipulation.

Hasas Yeganeh & Yazdanian (2008, pp. 171-151) studied the impact of corporate governance mechanisms on earnings management in Iran. The corporate governance principles of the present study that their effects on the decline in earnings management were examined, are as following: Ownership of institutional investors, non-responsible managers (non-executive) in board composition, lack of CEOs chairmanship vice chairman of the board, and the
presence of internal auditors. In this research, discretionary accruals using the modified Jones model have been used as an indicator of corporate earnings to determine earnings management. For this purpose, data from 177 companies during years of 2002 to 2004 has been used. The results of this study show that when the percentage of institutional ownership in the company is more than 45%, earnings management decreases. In addition, the research findings suggest there is no relationship between the presence of non-executives managers in composition of the board of directors, the lack of CEO as Chairman or Vice Chairman of the Board of Directors, the presence of internal auditors in companies and earnings management.

Badaghi and Bazzazzadeh (2008, pp. 216-173) is about the relationship between earnings management and disclosure quality. The population of the research was firms listed in Tehran Stock Exchange during the years 2003 to 2004. Multiple regression was used to examine the research hypothesis, the results showed that no significant relationship between earnings management and the quality has not been disclosed. In this study, the modified Jones model used to measure earnings management and to measure the amount of disclosure. 235 cases of mandatory disclosure were collected according to the accounting standards of Iran, the Iranian Commerce Act, Direct Taxation Act and the rules and regulations of the stock market. Multiple regression was used to examine the research hypothesis, the results showed that there is no significant relationship between earnings management and the quality of disclosure.

Saghafi and Bharmoghadam (2008, pp. 125-103) in their research studied drivers affect earnings management. In this paper, in addition to examination of earnings management literature, fifteen factors were identified as the most common incentives that affect earnings management. To consider the economic environment, social and cultural in Iran, seven factors (financial structure, ownership structure, major supply, reward management, quality of work for auditing, firm growth and firm size) of the drivers mentioned in the theoretical reasons were tested on the Tehran Stock Exchange market. In order to test hypotheses, the models commonly used in Western countries was discussed and examined, and finally the model was presented consistent with local situation.

Moradzadehfar et al (2009, pp. 98-85) have been examined the relationship between institutional ownership and earnings management of listed companies in Tehran Stock Exchange. The research has been conducted to provide insights about the role of institutional investors, whether institutional ownership of shares has an impact on profit management method. In previous studies about the relationship between institutional ownership and earnings management, it is assumed that corporations have the same ability to create abnormal accruals to earnings management and the impact of corporate governance on managers' ability to earning management, have been ignored. Institutional investors improve the quality of corporate governance in financial reporting. Companies listed in Tehran Stock Exchange constituted the population of the study. Two types of tests, including correlation test and multiple regression analysis, have been used to examine the relationship between earnings management and institutional ownership. Overall, these results indicate a significant negative relationship between the level of institutional ownership and earnings management.
Noravesh & Hoseini (2009, pp.134-117) using historical data during 2002 to 2006 from the 51 companies listed in Tehran Stock Exchange have been studied the relationship between corporate disclosure quality (including reliability and timeliness) and earnings management. The underlying assumption of the research is that improving the quality of corporate disclosure is negatively related to earnings management. In this study, the criteria of timeliness and reliability were used for measuring disclosure quality, and the management of corporate profits is estimated by using the modified Jones model. The finding of this study indicates that there is a significant negative relationship between the quality of corporate disclosure and earnings management, the findings indicate there is a significant negative relationship between timely corporate disclosure and earnings management.

Ahmadpoor et al. (2008, pp.89-69) examined earnings management behavior and its relation to regulatory tools of corporate governance, non-executive directors (internal supervisory tools of corporate governance) and major institutional investors (external monitoring tools of corporate governance). The treatment of earnings management in this study that is based on a threshold model and is determined through maximization of reported earnings and meet the optimal threshold to profitability (level of zero for profit and the profit reported of previous years) is defined as Increasing earnings management and decreasing earnings management and abnormal accruals in working capital are representative for earnings management. The research hypotheses testing were conducted with the help of regression analysis using data from 185 companies listed in Tehran Stock Exchange during the period 2003-2006 and by combining time series and cross-sectional study. The results of treatment of opportunistic earnings management showed that abnormally normal accruals can't justify changes in future profits and is as a sign to profitability in future years. The results of examining corporate governance monitoring tools on earnings management behavior indicate that when the motive for income manipulation is high, non-executives managers and main institutional investors have poor role in reducing malformations of abnormal accruals.

Modarres et al. (2009, pp.78-59) also explores the motivation of earnings management of listed companies in Tehran Stock Exchange. For this purpose, they calculated discretionary accruals as a measure to detect earnings management using modified Jones model between the years 2002-2007. The results show that firm size and debt contracts are stimulus for earning management for companies in both examined industries, but avoid low-loss variable affected on earning management in companies in the industry of oil products and chemical products. Furthermore, we didn't find a significant relationship between deviation in operating activities and earning management in the both industries. Also the results suggest that motivations of firm size and debt contracts has more strength for earning management in basic metals and mining industry in the debt contracts in compared to oil products and chemical industry.

Tariverdi & Rostami (2011) studied the effect of earnings management on the quality of financial reporting. They considered the Prediction accuracy of future operating cash flows and earnings stability as an indicator which measures earnings quality of financial reporting. Arsenic model is applied for calculating earnings management and cash flow approach is used for accruals. Also, the adjusted Barth model Barth was used for measuring of
forecasting future operating cashflows through operational income components and the income before abnormal items was used for predicting the stability of earnings before abnormal items. The results of this study indicate that earnings management through accruals reduce the quality of financial reporting. It means that the purpose of earnings management is orientation towards distorts financial reports and management opportunistic benefits. Since earnings management will bring reducing in the prediction of future operating cashflows. Also the results indicate that earnings management does not increase the income stability. (S. QakemShirazi, 2012, p 53).

**The model and research paradigm:**

In this study we test the hypothesis according to Sun and rat studies (2012, p 36) will be used in the following models:

\[
\text{Adj(}DA\text{)}_{it} = \alpha_0 + \beta_1 CLUSTER_{it} + \beta_2 SIZE_{it} + \beta_3 GROWTH_{it} + \beta_4 ROA_{it} + \beta_5 WC_{it} + \beta_6 LEV_{it} + \epsilon_{it}
\]

In this model we have:

\(\text{Adj(}DA\text{)}_{it}\) = the adjusted discretionary accruals for firm i in t year.

\(CLUSTER_{it}\) = virtual variable of earnings before earning management for firm i in t year

\(SIZE_{it}\) = firm size of firm I in t year

\(GROWTH_{it}\) = growth opportunities for the firm i in t year

\(ROA_{it}\) = Profitability for the firm i in t year

\(WC_{it}\) = working capital for firm i in t year

\(LEV_{it}\) = financial leverage for the firm i in t year

**Research variables:**

The study included 7 variables:

Dependent variable:

Adjusted discretionary accruals: in the model Haley (1985, p 85) this item calculated from the comparison of the total accruals mean accruals (scaled for prior period total assets) of the previous period (period estimates) withevent period. In the literature there is an edited version of the Jones model, which is called the modified Jones model. This model was
used the first time by Dechewand others (1995). Jones performed this adjustment for non-discretionary accruals in the event period (i.e., in the period that is assumed in which earnings management have occurred) in this figure:

\[ NDA_t = a_1 \left( \frac{1}{A_{t-1}} \right) + a_2 (\Delta REV_t - \Delta REC_t) + a_3 (PPE_t) \]

In this study discretionary accruals is used as a measure of earnings management. Pensel et al. (2000, p. 313) have proposed a new approach in estimating discretionary accruals, where operating cashflow changes entered into the Jones model as an explanatory variable (1991, p. 193).

\[ TAC_{it} / TAC_{i,t-1} = a_1 (1 / TA_{i,t-1}) + a_2 (\Delta REV_{it} / TA_{i,t-1}) + a_3 (PPE_{it} / TA_{i,t-1}) + a_4 (\Delta CF_{it}) + e_{it} \]

In this model:

- \( TAC_{it} \) = total accruals in the firm \( i \) in which is calculated from the difference between operating income and operating cashflow
- \( TA_{i,t-1} \) = total asset for firm \( i \) in \( t-1 \) year
- \( \Delta REV_{it} \) = the difference between net sales in \( t \) year with net sales in \( t-1 \) year
- \( PPE_{it} \) = the net property and equipment in the firm \( i \) for \( t \) year
- \( \Delta CF_{it} \) = the difference between operating cashflow in the firm \( i \) for \( t \) year with the company's operating cashflow in the \( t-1 \) year which are homogenization using the total beginning assets of the first period. In this connection, the modified Jones model is estimated and the resulting residuals as discretionary accruals are considered. Then the companies are classified in each year based on the return on assets ratio in percentile and the median for discretionary accruals are computed for each decile which will be deducted from discretionary accruals for each company. Thus, the adjusted discretionary accruals will be achieved.

\[ Adj(DA_{it}) = DA_{it} - \text{Median}(DA)_{it} \]

The research independent variables:

The earnings before applying earning management: this variable is an indicator variable that is calculated as follows:

First the earnings before applying earning management is calculated using this equation:

\[ PME_{it} = E_t - Adj(DA)_{it} \]

\[ \Delta PME_{it} = \Delta E_t - Adj(DA)_{it} \]

\[ PME_{it} = \text{Profit before earning management for firm } i \text{ and } t \text{ year} \]
ΔPMΕ<sub>it</sub> = changes in Profit before earning management for firm i and t year

E<sub>it</sub> = Net profit that is homogenization using total assets in the first year

ΔE<sub>it</sub> = changes in net profit that is homogenization using total assets in the first year

Adj(ΔA)<sub>it</sub> = Adjusted discretionary accruals for firm I in I year

Then, Transversedistance of managemen tearing and earnings before earnings management is calculated using this relationship:

\[ 2(IQR)n^{-1/2} \]

Where \( n \) is equal to the number of observations and IQR is the inter-quartile range.

Then depending on the amount of transversedistance CLUSTER_N<sub>it</sub> is classified to four categories as follows:

<table>
<thead>
<tr>
<th>CLUSTER_N&lt;sub&gt;it&lt;/sub&gt;</th>
<th>Takes four constrained form as follows:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLUSTER_1&lt;sub&gt;it&lt;/sub&gt;</td>
<td>( 1 ) if ((PMΕ&lt;sub&gt;it&lt;/sub&gt; &lt; 0 \text{ OR } ΔPMΕ&lt;sub&gt;it&lt;/sub&gt; &lt; 0)), ( 0 ) otherwise;</td>
</tr>
<tr>
<td>CLUSTER_2&lt;sub&gt;it&lt;/sub&gt;</td>
<td>( 1 ) if ((PMΕ&lt;sub&gt;it&lt;/sub&gt; &lt; 0, E&lt;sub&gt;it&lt;/sub&gt; ≥ 0 \text{ OR } ΔPMΕ&lt;sub&gt;it&lt;/sub&gt; &lt; 0, ΔE&lt;sub&gt;it&lt;/sub&gt; ≥ 0)), ( 0 ) otherwise;</td>
</tr>
<tr>
<td>CLUSTER_3&lt;sub&gt;it&lt;/sub&gt;</td>
<td>( 1 ) if ((-0.07 ≤ PMΕ&lt;sub&gt;it&lt;/sub&gt; &lt; 0 \text{ OR } -0.07 ≤ ΔPMΕ&lt;sub&gt;it&lt;/sub&gt; &lt; 0)), ( 0 ) otherwise;</td>
</tr>
<tr>
<td>CLUSTER_4&lt;sub&gt;it&lt;/sub&gt;</td>
<td>( 1 ) if ((-0.07 ≤ PMΕ&lt;sub&gt;it&lt;/sub&gt; &lt; 0, 0 ≤ E&lt;sub&gt;it&lt;/sub&gt; &lt; 0.07 \text{ OR } -0.07 ≤ ΔPMΕ&lt;sub&gt;it&lt;/sub&gt; &lt; 0, 0 ≤ ΔE&lt;sub&gt;it&lt;/sub&gt; &lt; 0.07)), ( 0 ) otherwise;</td>
</tr>
</tbody>
</table>

Control variables:

Firm size: this item is equal to natural logarithm of total assets

\[ SIZE<sub>it</sub> = Ln(TA<sub>it</sub>) \]

In this relationship TA is equal to total assets.

Growth opportunities (Growth): In this study, growth opportunities is measured by the percentage growth in sales.

Profitability (ROA): profitability is measured by return on assets ratio. In this relationship OI is operating profit in firm I and TA is total asset.

\[ ROA<sub>it</sub> = \frac{OI<sub>it</sub>}{TA<sub>it</sub>} \]

Capital turnover ratio (WC): In this research, capital turnover ratio is calculated using the difference between current assets and current liabilities and is homogenization using the total debt.
Financial Leverage (LEV): In this study the capital structure is calculated and control using financial leverage ratio. The financial leverage ratio is equal total debt to assets. In this model DEPT is equal to sum of total debt for firm I in the end of t year and TA is equal to total assets for firm year at the end of t year.

\[
LEV_{i,t} = \frac{DEBT_{i,t}}{TA_{i,t}}
\]

**Descriptive statistics for variables**

In general, the methods by which data can be processed and summarized, called descriptive statistics. These statistics describe the population or sample only and its purpose is calculating the parameters or sample research (Azar and Momenie, 2010, p 8). In descriptive statistics, data analysis is done using central index such as mean and dispersion index such as standard deviation, skewness and stretching.

**Figure 4.1) the adjusted discretionary accruals for sample firms during the years 2006-2011**

According to this chart, adjusted discretionary accruals of sample firms have a downward trend until 2010 but since 2011 has an increasing trend.

**Figure 4.2) the status of the Earning before earnings management for sample firm during the years 2006 to 2011**

**The models estimation:**

Considering to that in the present study the status of the loss before the earnings management has been studied in four levels, therefore, this hypothesis will be tested through the following four regression models and using panel data methods:

\[
Adj(DA)_{i,t} = \alpha_0 + \beta_1 CLUSTER_{-1,i,t} + \beta_2 SIZE_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 ROA_{i,t} + \beta_5 WC_{i,t} + \beta_6 LEV_{i,t} + \epsilon_{i,t}
\]

\[
Adj(DA)_{i,t} = \alpha_0 + \beta_1 CLUSTER_{-2,i,t} + \beta_2 SIZE_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 ROA_{i,t} + \beta_5 WC_{i,t} + \beta_6 LEV_{i,t} + \epsilon_{i,t}
\]
In figure 4.6 the results of the estimation of the four models and classical regression model assumptions are presented.

**Figure 4-6**, the first research hypothesis test results

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>C</strong></td>
<td><strong>T-Statistics</strong></td>
<td><strong>P-Value</strong></td>
<td><strong>CLUSTER_1</strong></td>
</tr>
<tr>
<td></td>
<td><strong>T-Statistics</strong></td>
<td><strong>P-Value</strong></td>
<td><strong>CLUSTER_2</strong></td>
<td><strong>CLUSTER_3</strong></td>
</tr>
<tr>
<td></td>
<td><strong>T-Statistics</strong></td>
<td><strong>P-Value</strong></td>
<td><strong>CLUSTER_4</strong></td>
<td><strong>SIZE</strong></td>
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<td></td>
<td><strong>GROWTH</strong></td>
<td><strong>T-Statistics</strong></td>
<td><strong>P-Value</strong></td>
<td><strong>GROWTH</strong></td>
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<tr>
<td></td>
<td><strong>P-Value</strong></td>
<td><strong>T-Statistics</strong></td>
<td><strong>P-Value</strong></td>
<td><strong>P-Value</strong></td>
</tr>
</tbody>
</table>

- **AdjDA_{i,t} = α_0 + β_1CLUSTER_3_{i,t} + β_2SIZE_{i,t} + β_3GROWTH_{i,t} + β_4ROA_{i,t} + β_5WC_{i,t} + β_6LEV_{i,t} + ε_{i,t}**

(2)

- **AdjDA_{i,t} = α_0 + β_1CLUSTER_4_{i,t} + β_2SIZE_{i,t} + β_3GROWTH_{i,t} + β_4ROA_{i,t} + β_5WC_{i,t} + β_6LEV_{i,t} + ε_{i,t}**

(3)

- **AdjDA_{i,t} = α_0 + β_1CLUSTER_4_{i,t} + β_2SIZE_{i,t} + β_3GROWTH_{i,t} + β_4ROA_{i,t} + β_5WC_{i,t} + β_6LEV_{i,t} + ε_{i,t}**

(4)
<table>
<thead>
<tr>
<th>(P-Value)</th>
<th>(P-Value)</th>
<th>(P-Value)</th>
<th>(P-Value)</th>
</tr>
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<td><strong>1293/5</strong></td>
<td>1504/0</td>
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<td>(922/2)</td>
<td>(579/13)</td>
</tr>
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<td>(P-Value)</td>
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<td>(0000/0)</td>
<td>(0594/0)</td>
</tr>
<tr>
<td>WC</td>
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<td><strong>1565/0</strong></td>
<td>1504/0</td>
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<td>(122/2)</td>
<td>(974/1)</td>
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<td>(P-Value)</td>
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<td>(0341/0)</td>
<td>(0486/0)</td>
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<tr>
<td>LEV</td>
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<td>(128/1)</td>
<td>(647/5)</td>
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<td>(P-Value)</td>
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<td>2982/0</td>
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<td><strong>039/2</strong></td>
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<td>(0000/0)</td>
<td>(0000/0)</td>
</tr>
<tr>
<td>Jarque-Bera -statistics</td>
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<td>841/1</td>
<td>344/4</td>
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<td>(P-Value)</td>
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<td>(1139/0)</td>
<td>(2611/0)</td>
</tr>
<tr>
<td>statisticsBreusch-Pagan</td>
<td><strong>0003/0</strong></td>
<td>865/0</td>
<td>162/4</td>
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<tr>
<td>(P-Value)</td>
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<td>(0598/0)</td>
</tr>
<tr>
<td>Watson-Durbin statistics</td>
<td>949/1</td>
<td><strong>045/2</strong></td>
<td>889/1</td>
</tr>
</tbody>
</table>

**Indicates significant at the 1% error level and * indicates significance at the 5% error.**

At reviews of overall model according to that the probability of (P-VALUE) F statistics in all four models is lower than 0.05 (0000/0) with a 95% significance of overall model is confirmed. The coefficient of determination on the models also indicate that the first model with the rate of 58/67%, the second model with the rate of 23/60%, the third model with the rate of 82/29% and the fourth model with the rate of 90/29% explain the changes in adjusted discretionary accruals. Also to evaluate the validity of the model and the assumptions of classical regression it should be done tests in related to residues normality, homogeneity of variance and independence residuals. In this research Jarque-Bera test was
used to evaluate normality of error terms. The results of this test indicate residuals obtained from the estimated in each four models have normal distributions at % 95 confidence interval. So that the probability (P-VALUE) in this test is greater than 0.05 for all four models. Other assumptions of classical regression are homogeneity of residual variance. In this study the Breusch-Pagan test has been used to evaluate homogeneity of residual variance.

In this relevance, the probability (P-VALUE) related to these second and fourth models are greater than 0.05 and homogeneity of residual variance is approved. But in the first and third model, the probability (P-VALUE) of Breusch-Pagan is less than 0.05 and indicates a lack of consistency in residual variance between the two models. In this study, we address this problem by using the generalized least squares method and in estimation weighting coefficients are given to the model by statistical software.

In this connection, the probability (P-VALUE) of CLUSTER_1 Variable of t-statistic is less than 0/05 (0/0000). Therefore, we can say with 95% confidence there is a significant correlation between being choking for firm, the earning before applying earning management and adjusted discretionary accruals. Also according to that the coefficient of variable (CLUSTER_1) is positive (1/6935). It can be said that there is a direct relationship between loss before applying earning management and adjusted discretionary accruals. Thus can be concluded that when the company has losses before applying earnings management, the possibility of using discretionary accruals in order to be profitable for firm increase. Therefore, the first hypothesis is confirmed at the level of 95%. In this study the subject has been studied to examine the issue. In the second level, the status for firms when they have losses before applying earning management and have earnings after applying has been considered (the second model). In this connection, the probability (P-VALUE) for t-statistic related to CLUSTER_2 Variable is less than 0.05 (0.0000). And the coefficient is positive (1/6635). So we can say with 95% confidence level when the firm has losses before applying earning management and has earnings after applying, the possibility of using discretionary accruals in order to be profitable for firm increase. In the third and fourth levels (models III and IV) being a choking company before applying earnings management has been studied in a smaller range. In other words, at the level of possibility of using discretionary accruals when the loss is small has been explored. According to the probability value (P-VALUE) for t-statistics related to both variables (CLUSTER_4 and CLUSTER_3) are greater than 0.05, thus we can say has a low loss before applying earning management effect on the possibility of using discretionary accruals significantly and the possibility of using discretionary accruals in order to be more profitable is appeared when the losses before applying earnings management is high.

The model estimation:

According to the study carried out the status of earning before earning management at four levels, so this hypothesis has been tested through following models and by using panel data method:

\[ AdjDA_{it} = \alpha_0 + \beta_1 CLUSTER_1_{it} + \beta_2 SIZE_{it} + \beta_3 GROWTH_{it} + \beta_4 ROA_{it} \]
\[ + \beta_5 WC_{it} + \beta_6 LEV_{it} + \varepsilon_{it} \]
The results of the estimation of the four models and classic regression assumptions are presented in figure 4.9.

**Figure 4-9) the second hypothesis test results**

<table>
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<th>Model 6</th>
<th>Model 7</th>
<th>Model 8</th>
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<td>**4458/3-</td>
<td>**6781/7-</td>
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<td>(151/4-)</td>
<td>(994/5-)</td>
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<td></td>
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<td>(0000/0)</td>
<td>(0000/0)</td>
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<td></td>
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<td><strong>4603/0</strong></td>
<td><strong>4005/0</strong></td>
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<tr>
<td>------------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
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<td><strong>(699/2-)</strong></td>
<td><strong>(076/6-)</strong></td>
<td><strong>(808/4-)</strong></td>
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<table>
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<td>(0003/0)</td>
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</table>

**Indicates significant at the 1% error level and * indicates significance at the 5% error.**

According to the probability value (P-VALUE) of F statistics in all four models are lower than 0/05, the overall model is confirmed with confidence interval of 95%. The coefficient of determination in models also indicate that the first model is 58/67%, the second model is 23/60%, the third model is 82/29% and the fourth model is 90/29% to account for changes in adjusted discretionary accruals. Also in examining the validity of the model and the assumptions of the classical regression, the results of the Jarque-Bera indicate the estimated residual in
four models have normal distribution in 95%. So that the probability (P-VALUE) for all four models is greater than 0.05. Also in examining the homogeneity of variance using Breusch-Pagan, the probability (P-VALUE) in the first model is greater than 0.05 and homogeneity of residual variance is approved. But the probability (P-VALUE) in Breusch-Pagan is less than 0.05 in models II, III and IV and indicates a lack of consistency of these three models in the residual variance. In this study we address this problem by using the generalized least squares method and weighting coefficients are given to the model in estimation by statistical software. Moreover, considering that the Durbin-Watson statistic are between 1/5 and 2/5 in all four models, therefore, the lack of correlation between the residuals are accepted as one of the basic assumption of regression in all four models.

The results of the first research hypotheses testing

The purpose of testing the first hypothesis is showing the status of discretionary accruals in order to the profitable firm when the firm is before applying earnings management and the statistical hypothesis is defined as follows:

H0: When the firm has losses before applying earnings management, Possibility of using the discretionary accruals to show positive changes in profitability don’t increases.

H1: When the firm has losses before applying earnings management, Possibility of using the discretionary accruals to show positive changes in profitability increases.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>Coefficient</th>
<th>Statistics</th>
<th>The value of Statistics</th>
<th>Significance level</th>
<th>results</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLUSTER_1</td>
<td>1/6935</td>
<td>T</td>
<td>84/205</td>
<td>0.0000</td>
<td>accept</td>
</tr>
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</table>

As you see, there is direct relationship between the losses before applying earnings management and adjusted discretionary accruals. So the effect of having losses on earning management in active firms in capital markets has been verified as a major driver of earnings management.

The results of the second research hypotheses testing

The purpose of testing the second hypothesis in this study was to showing the status of discretionary accruals for profitable showing when that company profits in current year is lower than the previous year's profit and the statistical hypothesis is defined as follows:

H0: When the company's earnings in the current year are lower than the previous year, Possibility of using the discretionary accruals to show positive changes in profitability don’t increases.
H1: When the company's earnings in the current year are lower than the previous year, Possibility of using the discretionary accruals to show positive changes in profitability increases.

H2: When the company's earnings in the current year are lower than the previous year, Possibility of using the discretionary accruals to show positive changes in profitability increases.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>Coefficient</th>
<th>Statistics</th>
<th>The value of Statistics</th>
<th>Significance level</th>
<th>results</th>
</tr>
</thead>
<tbody>
<tr>
<td>ΔCLUSTER_1</td>
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<td>T</td>
<td>44/164</td>
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</tr>
</tbody>
</table>

There is direct relationship between lower earnings before management from the previous earning and adjusted discretionary accruals. Therefore, lower profit in current year compared to the year before the company can be the second major reason for earnings management in the capital markets of Iran.

**Interpretation of the results of the second hypothesis**

Based on the results presented in figure 4-9, the variable CLUSTER_1Δ represents that the current earning is lower than previous earning before applying earnings management (the first model). In this connection, the probability (P-VALUE) for CLUSTER_1Δ Variable in t-statistic is less than 0.05. Therefore, we can say with 95% confidence level there is a significant association between low earning before earning and previous earning and adjusted discretionary accruals. Also, according to coefficient of variable for CLUSTER_1Δ (positive, 1/3045), we can say there is positive relationship between low earning before applying earning management and adjusted discretionary accruals. Thus, it can be concluded that when the current earning is lower than previous earning, the possibility to use discretionary accruals to show positive changes in profitability increases. Consequently, the second hypothesis is confirmed in the 95% confidence level. More in this study we examine the issue in three levels. In second level we consider the status that the current earning is lower than previous earning before applying earning management (the second model). In this connection, the probability (P-VALUE) for CLUSTER_2Δ Variable in t-statistic is less than 0/05 (0000/0) and the coefficient is positive. So we can say in the 95% confidence level when before earnings management the current earning is lower than the previous earning and after earning management current earning is greater than previous earning the possibility of using discretionary accruals increases. In the third and fourth levels (models III and IV) the changes of earning before and after applying earning management has been studied in a smaller range. In the other words, in this level we try to examine the possibility of using discretionary accruals when the changes of earning before and after earning management are low. According to the probability value (P-VALUE) of t-statistics related to both variables (ΔCLUSTER_4 & CLUSTER_3Δ) are greater than 0/05, So we can say that small changes of earning before and after applying earnings management does not significantly affect the possibility of using discretionary accruals and the possibility of using discretionary
accruals in order to profitable firm is more seen when the rate of earning changes before and after applying earnings management is high.

**Recommendations for future research**

- It is recommended in future research positive and negative effects of earning management on the investment markets will be investigated.
- It is recommended the place of high concentration on earnings in explain of abnormal accruals will be evaluated.
- It is suggested that in future research topics about earning chain are examined.
- The research could conducted by emphasize on certain industry and other characteristics of companies.
- It is recommended the applying of earnings management through the changes of classification in income statement including cost items and financial cost will be evaluated.

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